

WHAT IS CLAIMED IS:

1. A method of coupling laser radiation from a linear laser diode array into a plurality of optical fibers corresponding in number to the number of laser diodes in the laser diode array, each of the optical fibers having a light entrance side, the method comprising the steps of:
- (a) providing a cylinder lens having at least the length of the linear laser diode array;
 - (b) arranging the light entrance sides of the optical fibers parallel to each other in a linear array;
 - (c) gluing the cylindrical lens onto said linear array of light entrance sides of the optical fibers; and
 - (d) positioning said linear array of light entrance sides of the optical fibers and said cylindrical lens glued thereon, such that said cylindrical lens is aligned with the linear array of laser diodes for receiving radiation emitted therefrom and focussing said received radiation into said plurality of optical fibers.
2. The method of claim 1, wherein in step (c) said gluing causes said cylindrical lens to be centered on said linear array of entrance ends of the optical fibers.
3. The method of claim 1 wherein said cylindrical lens is a length of optical fiber.
4. The method of claim 3, wherein in step (c) said gluing causes said cylindrical lens to be centered on said linear array of entrance ends of the optical fibers.

5. The method of claim 4, wherein in step (c) said gluing is by means of an epoxy adhesive.

6. A method of coupling laser radiation from a linear laser diode array into a plurality of first optical fibers corresponding in number to the number of laser diodes in the laser diode array, each of the first optical fibers having a core diameter and a light entrance side, the method comprising the steps of:

- (a) providing a second optical fiber having at least the length of the linear laser diode array;
- (b) arranging the entrance sides of the first optical fibers parallel to each other in a linear array;
- (c) gluing the second optical fiber onto said linear array of entrance sides of the first optical fibers, said gluing step centering said second optical fiber on said linear array of entrance ends of the first optical fibers; and
- (d) positioning said linear array of entrance sides of the first optical fibers and said second optical fiber glued and centered thereon, such that said second optical fiber is aligned with the linear array of laser diodes for receiving radiation emitted therefrom and focussing said received radiation into the plurality of first optical fibers.

7. The method of claim 6 wherein said first optical fibers are multimode optical fibers.

8. The method of claim 7 wherein said second optical fiber has a diameter less than the core diameter of the first optical fibers.

9. The method of claim 8 wherein said gluing is by means of an epoxy adhesive.

10. In a laser diode module wherein laser radiation from a linear laser diode array is coupled into a plurality of optical fibers corresponding in number to the number of laser diodes in the laser diode array, each of the optical fibers having a light entrance side, the invention characterized in that:

the light entrance sides of the optical fibers are arranged parallel to each other in a linear array; a cylindrical lens having at least the length of the linear laser diode array is glued onto said linear array of light entrance sides of the optical fibers; and said linear array of light entrance sides of the optical fibers and said cylindrical lens glued thereon is aligned with the linear array of laser diodes for receiving radiation emitted therefrom and focussing said received radiation into said plurality of optical fibers.

11. The laser diode module claim 10, the invention further characterized in that said cylindrical lens is centered on said linear array of light entrance sides of the optical fibers.

12. The laser diode module claim 11, the invention further characterized in that said cylindrical lens is a length of optical fiber.

13. The laser diode module claim 12, the invention further characterized in that, in step (c) said gluing causes said

~~cylindrical lens to be centered on said linear array of entrance ends of the optical fibers.~~

Sub A3 14. The laser diode module claim 13, the invention further characterized in that, in step (c) said gluing is by means of an epoxy adhesive.

15. In a laser diode module wherein laser radiation from a linear laser diode array is coupled into a plurality of first optical fibers corresponding in number to the number of laser diodes in the laser diode array, each of the first optical fibers having a core diameter and a light entrance side, the invention characterized in that:

the light entrance sides of the first optical fibers are arranged parallel to each other in a linear array;
a second optical fiber having at least the length of the linear laser diode array is glued onto said linear array of entrance sides of the first optical fibers and centered thereon; and

said linear array of light entrance sides of the first optical fibers and said second optical fiber glued and centered thereon is aligned with the linear array of laser diodes for receiving radiation emitted therefrom and focussing said received radiation into said plurality of first optical fibers.

Sub B 16. The laser diode module claim 15, the invention further characterized in that said first optical fibers are multimode optical fibers.

18. The laser diode module claim 17, the invention further characterized in that said gluing is by means of an epoxy adhesive.

abstract

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